

CLAIMS

What is claimed is:

1. A method for co-operative thermal management of a plurality of independent electronic devices housed within a common enclosure, comprising:
designating a priority number for each of said plurality of independent electronic devices, wherein each of said plurality of independent electronic devices has a thermal controller; and
measuring a temperature of each of said plurality of independent electronic devices and for each of said plurality of independent electronic devices:
determining if said measured temperature exceeds a threshold value for said independent electronic device; and
initializing a count-down value to said designated priority number of said independent electronic device in response to a determination that said measured temperature exceeds a threshold value.
2. The method for co-operative thermal management as recited in Claim 1, wherein said initializing a count-down value further includes initiating an interval timer.
3. The method for co-operative thermal management as recited in Claim 1, wherein said initializing a count-down value further includes waiting a first predetermined period of time before repeating said measuring a temperature of said independent electronic device in response to a determination that said measured temperature does not exceed said threshold value.

1 4. The method for co-operative thermal management as recited in Claim
2 2, wherein said measuring a temperature further includes:
3 determining if said count-down value is equal to zero; and
4 powering-down said independent electronic device in response to a
5 determination that said count-down value is equal to zero, otherwise
6 waiting a second predetermined period of time before obtaining a second
7 temperature measurement of said independent electronic device and determining if said
8 second temperature measurement exceeds said threshold value.

5 5. The method for co-operative thermal management as recited in Claim
6 4, wherein said measuring a temperature further includes:
7 determining if said interval timer has expired in response to a determination
8 that said second temperature measurement exceeds said threshold value; and
 decrementing said count-down value, reinitiate said interval timer and repeat
 said determining if said count-down value is equal to zero in response to a
 determination that said interval timer has expired, otherwise repeat waiting a second
 predetermined period of time before obtaining a temperature measurement.

1 6. A method for co-operative thermal management of a plurality of
2 independent electronic devices housed within a common enclosure, comprising:
3 designating a priority number for each of said plurality of independent
4 electronic devices, wherein each of said plurality of independent electronic devices has
5 a service processor that remains operational when said electronic device is powered
6 down; and
7 measuring a temperature of each of said plurality of independent electronic
8 devices and for each of said plurality of independent electronic devices:
9 determining if said measured temperature exceeds a threshold value for
10 said independent electronic device; and
11 initializing a count-down value to said designated priority number of
12 said independent electronic device in response to a determination that said
13 measured temperature does not exceed a threshold value.

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1 9. The method for co-operative thermal management as recited in Claim
2 8, wherein said measuring a temperature further includes:

3 determining if said interval timer has expired in response to a determination
4 that said second temperature measurement does not exceed said threshold value; and

5 decrementing said count-down value, reinitiate said interval timer and repeat
6 said determining if said count-down value is equal to zero in response to a
7 determination that said interval timer has expired, otherwise repeat waiting a second
8 predetermined period of time before obtaining a temperature measurement.

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1 10. An electronic device, comprising:
2 a designated priority number; and
3 a thermal controller, including:
4 means for measuring a temperature of said electronic device;
5 means for determining if said measured temperature exceeds a
6 threshold value for said electronic device; and
7 means for initializing a count-down value to said designated priority
8 number of said electronic device.

11. The electronic device as recited in Claim 10, wherein said thermal
controller is embodied in a service processor that remains operational when said
electronic device is powered down.

12. The electronic device as recited in Claim 10, wherein said
thermal controller powers down said electronic device in response to a determination
that said measured temperature exceeds said threshold value and said count-down
value is equal to zero.

13. The electronic device as recited in Claim 11, wherein said
service processor powers up said electronic device in response to a determination that
said measured temperature does not exceed said threshold value and said count-down
value is equal to zero.

14. The electronic device as recited in Claim 11, wherein said electronic
device is a server blade.

- 1 15. A data processing system, comprising:
2 an enclosure; and
3 a plurality of independent electronic devices housed within said enclosure,
4 wherein each of said plurality of independent electronic devices having:
5 a designated priority; and
6 a thermal controller, including:
7 means for measuring a temperature of said independent
8 electronic device;
9 means for determining if said measured temperature exceeds a
10 threshold value for said independent electronic device; and
11 means for initializing a count-down value to said designated
12 priority number of said independent electronic device.
- 1 16. The data processing system as recited in Claim 15, further comprising:
2 a backplane coupled to said plurality independent electronic devices; and
3 a plurality of fans.
- 1 17. The data processing system as recited in Claim 15, wherein said thermal
2 controller is embodied in a service processor that remains operational when said
3 independent electronic device is powered down.
- 1 18. The data processing system as recited in Claim 15, wherein said
2 thermal controller powers down said independent electronic device in response to a
3 determination that said measured temperature exceeds said threshold value and said
4 count-down value is equal to zero.

1 19. The data processing as recited in Claim 17, wherein said
2 service processor powers up said independent electronic device in response to a
3 determination that said measured temperature does not exceed said threshold value
4 and said count-down value is equal to zero.

1 20. The data processing system as recited in Claim 15, wherein said
2 independent electronic device is a server blade.

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1 21. A computer-readable medium having stored thereon computer
2 executable instructions for implementing a method for co-operative thermal
3 management of a plurality of independent electronic devices housed within a common
4 enclosure, said computer executable instructions when executed by one of said
5 plurality of independent electronic devices perform the steps of:

6 designating a priority number for said independent electronic device,
7 measuring a temperature of said independent electronic device;
8 determining if said measured temperature exceeds a threshold value for said
9 independent electronic device; and

10 initializing a count-down value to said designated priority number of said
11 independent electronic device and initiate an interval timer in response to a
12 determination that said measured temperature exceeds a threshold value.

13 22. The computer-readable medium as recited in Claim 21, wherein said
14 computer executable instruction further perform the steps of:

1 determining if said count-down value is equal to zero;
2 powering-down said independent electronic device in response to a
3 determination that said count-down value is equal to zero, otherwise

4 waiting a predetermined period of time before obtaining a second temperature
5 measurement of said independent electronic device and determining if said second
6 temperature measurement exceeds said threshold value;

7 determining if said interval timer has expired in response to a determination
8 that said second temperature measurement exceeds said threshold value; and

9 decrementing said count-down value, reinitiate said interval timer and repeat
10 said determining if said count-down value is equal to zero in response to a
11 determination that said interval timer has expired, otherwise repeat waiting a
12 predetermined period of time before obtaining a temperature measurement.

1 23. A computer-readable medium having stored thereon computer
2 executable instructions for implementing a method for co-operative thermal
3 management of a plurality of independent electronic devices housed within a common
4 enclosure, said computer executable instructions when executed by one of said
5 plurality of independent electronic devices perform the steps of:

6 designating a priority number for said independent electronic device,
7 measuring a temperature of said independent electronic device;
8 determining if said measured temperature exceeds a threshold value for said
9 independent electronic device; and

10 initializing a count-down value to said designated priority number of said
11 independent electronic device and initialize an interval timer in response to a
12 determination that said measured temperature does not exceed a threshold value.

13 24. The computer-readable medium as recited in Claim 23, wherein said
14 computer executable instruction further perform the steps of:

1 determining if said count-down value is equal to zero;
2 powering-up said independent electronic device in response to a determination
3 that said count-down value is equal to zero, otherwise

4 waiting a predetermined period of time before obtaining a second temperature
5 measurement of said independent electronic device and determining if said second
6 temperature measurement exceeds said threshold value;

7 determining if said interval timer has expired in response to a determination
8 that said second temperature measurement does not exceed said threshold value; and

9 decrementing said count-down value, reinitiate said interval timer and repeat
10 said determining if said count-down value is equal to zero in response to a
11 determination that said interval timer has expired, otherwise repeat waiting a
12 predetermined period of time before obtaining a temperature measurement.